

Computer Setup (F10) Utility Guide

Business Desktops

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This guide provides instructions on how to use Computer Setup. This tool is used to reconfigure and modify computer default settings when new hardware is installed and for maintenance purposes.

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Business Desktops

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Computer Setup (F10) Utility

Computer Setup (F10) Utilities

Use Computer Setup (F10) Utility to do the following:

- Change factory default settings.
- Set the system date and time.
- Set, view, change, or verify the system configuration, including settings for processor, graphics, memory, audio, storage, communications, and input devices.
- Modify the boot order of bootable devices such as hard drives, diskette drives, optical drives, or USB flash media devices.
- Enable Quick Boot, which is faster than Full Boot but does not run all of the diagnostic tests run during a Full Boot. You can set the system to:
 - ❏ always Quick Boot (default);
 - ❏ periodically Full Boot (from every 1 to 30 days); or
 - ❏ always Full Boot.
- Select Post Messages Enabled or Disabled to change the display status of Power-On Self-Test (POST) messages. Post Messages Disabled suppresses most POST messages, such as memory count, product name, and other non-error text messages. If a POST error occurs, the error is displayed regardless of the mode selected. To manually switch to Post Messages Enabled during POST, press any key (except **F1** through **F12**).
- Establish an Ownership Tag, the text of which is displayed each time the system is turned on or restarted.
- Enter the Asset Tag or property identification number assigned by the company to this computer.

- Enable the power-on password prompt during system restarts (warm boots) as well as during power-on.
- Establish a setup password that controls access to Computer Setup (F10) Utility and the settings described in this section.
- To secure integrated I/O functionality, including the serial, USB, or parallel ports, audio, or embedded NIC, so that they cannot be used until they are unsecured.
- Enable or disable Master Boot Record (MBR) Security.
- Enable or disable removable media boot ability.
- Enable or disable legacy diskette write ability (when supported by hardware).
- Solve system configuration errors detected but not automatically fixed during the Power-On Self-Test (POST).
- Replicate the system setup by saving system configuration information on diskette and restoring it on one or more computers.
- Execute self-tests on a specified ATA hard drive (when supported by drive).
- Enable or disable DriveLock security (when supported by MultiBay drive).

Using Computer Setup (F10) Utilities

Computer Setup can be accessed only by turning the computer on or restarting the system. To access the Computer Setup Utilities menu, complete the following steps:

1. Turn on or restart the computer. If you are in Microsoft Windows, click **Start > Shut Down > Restart.**
2. As soon as the computer is turned on, press and hold the **F10** key until you enter Computer Setup. Press **Enter** to bypass the title screen, if necessary.



If you do not press the **F10** key at the appropriate time, you must restart the computer and press and hold the **F10** key again to access the utility.

If you are using a PS/2 keyboard, you may see a Keyboard Error message—disregard it.

3. Select your language from the list and press **Enter**.
4. A choice of five headings appears in the Computer Setup Utilities menu: File, Storage, Security, Power and Advanced.
5. Use the arrow (left and right) keys to select the appropriate heading. Use the arrow (up and down) keys to select the option you want, then press **Enter**. To return to the Computer Setup Utilities menu, press the **Esc** key.
6. To apply and save changes, select **File > Save Changes and Exit.**
 - ❏ If you have made changes that you do not want applied, select **Ignore Changes and Exit.**
 - ❏ To reset to factory settings, select **Set Defaults and Exit.** This option will restore the original factory system defaults.



CAUTION: Do NOT turn the computer power OFF while the ROM is saving the F10 Computer Setup changes because the CMOS could become corrupted. It is safe to turn off the computer only after exiting the F10 Setup screen.

Computer Setup		
Heading	**Option**	**Description**
File	System Information	Lists: • Product name • Processor type/speed/stepping • Cache size (L1/L2) • Installed memory size/speed, number of channels (single or dual) (if applicable) • Integrated MAC address for embedded, enabled NIC (if applicable) • System ROM (includes family name and version) • Chassis serial number • Asset tracking number
	About	Displays copyright notice.
	Set Time and Date	Allows you to set system time and date.
	Replicated Setup	**Save to Removable Media** Saves system configuration, including CMOS, to a formatted 1.44-MB diskette, a USB flash media device, or a diskette-like device (a storage device set to emulate a diskette drive). **Restore from Removable Media** Restores system configuration from a diskette, a USB flash media device, or a diskette-like device.
	Default Setup	**Save Current Settings as Default** Saves the current system configuration settings as the default. **Restore Factory Settings as Default** Restores the factory system configuration settings as the default.
✎ Support for specific Computer Setup options may vary depending on the hardware configuration.		

Computer Setup *(Continued)*

Heading	Option	Description
File *(continued)*	Apply Defaults and Exit	Applies the currently selected default settings and clears any established passwords.
	Ignore Changes and Exit	Exits Computer Setup without applying or saving any changes.
	Save Changes and Exit	Saves changes to system configuration or default settings and exits Computer Setup.
Storage	Device Configuration	Lists all installed BIOS-controlled storage devices. When a device is selected, detailed information and options are displayed. The following options may be presented. **Diskette Type** Identifies the highest capacity media type accepted by the diskette drive. Legacy Diskette Drives Options are 3.5" 1.44 MB and 5.25" 1.2 MB. **Drive Emulation** Allows you to select a drive emulation type for a certain storage device. (For example, a Zip drive can be made bootable by selecting diskette emulation.)

Drive Type	Emulation Options
ATAPI Zip drive	None (treated as Other). Diskette (treated as diskette drive).
IDE Hard Disk	None (treated as Other) Disk (treated as hard drive)

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description	
Storage *(continued)*	Device Configuration *(continued)*	**Drive Type** *(continued)*	**Emulation Options** *(continued)*
		Legacy Diskette	No emulation options available.
		IDE CD-ROM	No emulation options available.
		ATAPI LS-120	None (treated as Other). Diskette (treated as diskette drive).
		Default Values IDE/SATA	
		Multisector Transfers *(ATA disks only)* Specifies how many sectors are transferred per multi-sector PIO operation. Options (subject to device capabilities) are Disabled, 8, and 16.	
		Transfer Mode *(ATA devices only)* Specifies the active data transfer mode. Options (subject to device capabilities) are PIO 0, Max PIO, Enhanced DMA, Ultra DMA 0, and Max UDMA.	

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Storage *(continued)*	Device Configuration *(continued)*	**Translation Mode** *(ATA disks only)* Lets you select the translation mode to be used for the device. This enables the BIOS to access disks partitioned and formatted on other systems and may be necessary for users of older versions of UNIX (e.g., SCO UNIX version 3.2). Options are Automatic, Bit-Shift, LBA Assisted, User, and None. ⚠ **CAUTION:** Ordinarily, the translation mode selected automatically by the BIOS should not be changed. If the selected translation mode is not compatible with the translation mode that was active when the disk was partitioned and formatted, the data on the disk will be inaccessible. **Translation Parameters** *(ATA disks only)* ✎ This feature appears only when User translation mode is selected. Allows you to specify the parameters (logical cylinders, heads, and sectors per track) used by the BIOS to translate disk I/O requests (from the operating system or an application) into terms the hard drive can accept. Logical cylinders may not exceed 1024. The number of heads may not exceed 256. The number of sectors per track may not exceed 63. These fields are only visible and changeable when the drive translation mode is set to User.
	Storage Options	**Removable Media Boot** Enables/disables ability to boot the system from removable media.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Storage *(continued)*	Storage Options *(continued)*	**Legacy Diskette Write** Enables/disables ability to write data to legacy diskettes. ✎ After saving changes to Removable Media Write, the computer will restart. Turn the computer off, then on, manually. **BIOS DMA Data Transfers** Allows you to control how BIOS disk I/O requests are serviced. When "Enable" is selected, the BIOS will service ATA disk read and write requests with DMA data transfers. When "Disable" is selected, the BIOS will service ATA disk read and write requests with PIO data transfers.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Storage *(continued)*	Storage Options *(continued)*	**SATA Emulation** Allows you to choose how the SATA controller and devices are accessed by the operating system. "Separate IDE Controller" is the default option. Up to 4 SATA and 2 PATA devices may be accessed in this mode. The SATA and PATA controllers appear as two separate IDE controllers. Use this option with Microsoft Windows 2000 and Windows XP. • SATA 0 is seen as SATA Primary Device 0 • SATA 1 (if present) is seen as SATA Secondary Device 0 "Combined IDE Controller" is the other option. Up to 2 PATA and 2 SATA devices may be accessed in this mode. The SATA and PATA controllers appear as one combined IDE controller. Use this option with Microsoft Windows 98 and earlier operating systems. • PATA Primary Device 0 replaces SATA 1 • PATA Primary Device 1 replaces SATA 3 **IDE Controller** Allows you to enable or disable the primary IDE controller. This feature is supported on select models only. **Primary SATA Controller** Allows you to enable or disable the Primary SATA controller.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Storage *(continued)*	Storage Options *(continued)*	**Secondary SATA Controller** Allows you to enable or disable the Secondary SATA controller. This feature is supported on select models only.
	DPS Self-Test	Allows you to execute self-tests on ATA hard drives capable of performing the Drive Protection System (DPS) self-tests. ✎ This selection will only appear when at least one drive capable of performing the DPS self-tests is attached to the system.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Storage *(continued)*	Boot Order	Allows you to: • Specify the order in which attached devices (such as a USB flash media device, diskette drive, hard drive, optical drive, or network interface card) are checked for a bootable operating system image. Each device on the list may be individually excluded from or included for consideration as a bootable operating system source. • Specify the order of attached hard drives. The first hard drive in the order will have priority in the boot sequence and will be recognized as drive C (if any devices are attached). ✎ MS-DOS drive lettering assignments may not apply after a non-MS-DOS operating system has started. **Shortcut to Temporarily Override Boot Order** To boot **one time** from a device other than the default device specified in Boot Order, restart the computer and press **F9** when the monitor light turns green. After POST is completed, a list of bootable devices is displayed. Use the arrow keys to select the preferred bootable device and press **Enter**. The computer then boots from the selected non-default device for this one time.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Security	Setup Password	Allows you to set and enable setup (administrator) password. ✎ If the setup password is set, it is required to change Computer Setup options, flash the ROM, and make changes to certain plug and play settings under Windows. See the *Troubleshooting Guide* on the *Documentation CD* for more information.
	Power-On Password	Allows you to set and enable power-on password. See the *Troubleshooting Guide* on the *Documentation CD* for more information.
	Password Options (This selection will appear only if a power-on password is set.)	Allows you to specify whether the password is required for warm boot (**CTRL**+**ALT**+**DEL**). See the *Desktop Management Guide* on the *Documentation CD* for more information.
	Pre-Boot Authorization	Allows you to enable/disable the Smart Card to be used in place of the Power-On Password.
	Smart Cover	Allows you to: • Lock/unlock the Cover Lock. • Set the Cover Removal Sensor to Disable/Notify User/Setup Password. ✎ *Notify User* alerts the user that the sensor has detected that the cover has been removed. *Setup Password* requires that the setup password be entered to boot the computer if the sensor detects that the cover has been removed. This feature is supported on select models only. See the *Desktop Management Guide* on the *Documentation CD* for more information.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Security *(continued)*	Embedded Security	Allows you to: • Enable/disable the Embedded Security device. • Reset the device to Factory Settings. This feature is supported on select models only. See the *Desktop Management Guide* on the *Documentation CD* for more information.
	Device Security	Enables/disables serial ports, parallel port, front USB ports, system audio, network controllers (some models), MultiBay devices (some models), SMBus controller (some models), and SCSI controllers (some models).
	Network Service Boot	Enables/disables the computer's ability to boot from an operating system installed on a network server. (Feature available on NIC models only; the network controller must reside on the PCI bus or be embedded on the system board.)

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Security *(continued)*	System IDs	Allows you to set: • Asset tag (18-byte identifier) and ownership Tag (80-byte identifier displayed during POST). See the *Desktop Management Guide* on the *Documentation CD* for more information. • Chassis serial number or Universal Unique Identifier (UUID) number. The UUID can only be updated if the current chassis serial number is invalid. (These ID numbers are normally set in the factory and are used to uniquely identify the system.) • Keyboard locale setting (for example, English or German) for System ID entry.
	DriveLock Security	Allows you to assign or modify a master or user password for MultiBay hard drives. When this feature is enabled, the user is prompted to provide one of the DriveLock passwords during POST. If neither is successfully entered, the hard drive will remain inaccessible until one of the passwords is successfully provided during a subsequent cold-boot sequence. ✎ This selection will only appear when at least one MultiBay drive that supports the DriveLock feature is attached to the system. See the *Desktop Management Guide* on the *Documentation CD* for more information.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Security *(continued)*	Data Execution Prevention	Enable/Disable Data Execution Prevention Mode helps prevent OS security breaches. ✎ This selection is in effect only if the processor and operating system being used comprehend and utilize Data Execution Prevention Mode.
	Master Boot Record Security	Allows you to enable or disable Master Boot Record (MBR) Security. When enabled, the BIOS rejects all requests to write to the MBR on the current bootable disk. Each time the computer is powered on or rebooted, the BIOS compares the MBR of the current bootable disk to the previously-saved MBR. If changes are detected, you are given the option of saving the MBR of the current bootable disk, restoring the previously-saved MBR, or disabling MBR Security. You must know the setup password, if one is set. ✎ Disable MBR Security before intentionally changing the formatting or partitioning of the current bootable disk. Several disk utilities (such as FDISK and FORMAT) attempt to update the MBR. If MBR Security is enabled and disk accesses are being serviced by the BIOS, write requests to the MBR are rejected, causing the utilities to report errors. If MBR Security is enabled and disk accesses are being serviced by the operating system, any MBR change will be detected by the BIOS during the next reboot, and an MBR Security warning message will be displayed.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Security *(continued)*	Save Master Boot Record	Saves a backup copy of the Master Boot Record of the current bootable disk. ✎ Only appears if MBR Security is enabled.
	Restore Master Boot Record	Restores the backup Master Boot Record to the current bootable disk. ✎ Only appears if all of the following conditions are true: • MBR Security is enabled. • A backup copy of the MBR has been previously saved. • The current bootable disk is the same disk from which the backup copy of the MBR was saved. ⚠ **CAUTION:** Restoring a previously saved MBR after a disk utility or the operating system has modified the MBR may cause the data on the disk to become inaccessible. Only restore a previously saved MBR if you are confident that the current bootable disk's MBR has been corrupted or infected with a virus.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Power	OS Power Management	• Runtime Power Management - Enable/Disable. Allows certain operating systems to reduce processor voltage and frequency when the current software load does not require the full capabilites of the processor. • Idle Power Savings - Extended/Normal. Allows certain operating systems to decrease the processors power consumption when the processor is idle. • ACPI S3 Support - Enables or disables ACPI S3 support. • ACPI S3 Hard Disk Reset - Enabling this causes the BIOS to ensure hard disks are ready to accept commands after resuming from S3 before returning control to the operating system. • ACPI S3 PS2 Mouse Wakeup - Enables or disables waking from S3 due to PS2 mouse activity.
	Hardware Power Management	SATA power management enables or disables SATA bus and/or device power management.
	Thermal	Fan idle mode - This bar graph controls the minimum permitted fan speed.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Advanced* *For advanced users only.	Power-On Options	Allows you to set: • POST mode (QuickBoot, FullBoot, or FullBoot every 1–30 days). • POST messages (enable/disable). • **F9** prompt (enable/disable). Enabling this feature will display the text "F9 = Boot Menu" during POST. Disabling this feature prevents the text from being displayed. However, pressing the **F9** key will still access the Shortcut Boot [Order] Menu screen. See Storage > Boot Order for more information. • **F10** prompt (enable/disable). Enabling this feature will display the text "F10 = Setup" during POST. Disabling this feature prevents the text from being displayed. However, pressing the **F10** key will still access the Setup screen. • **F12** prompt (enable/disable). Enabling this feature will display the text "F12 = Network Service Boot" during POST. Disabling this feature prevents the text from being displayed. However, pressing the **F12** key will still force the system to attempt booting from the network.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Advanced* *(continued)* *For advanced users only.	Power-On Options *(continued)*	Allows you to set: • Option ROM prompt (enable/disable) Enabling this feature will cause the system to display a message before loading options ROMs. (This feature is supported on select models only.) • Remote wakeup boot source (remote server/local hard drive). • After Power Loss (off/on): After power loss, if you connect the computer to an electric power strip and would like to turn on power to the computer using the switch on the power strip, set this option to "on." ✎ If you turn off power to the computer using the switch on a power strip, you will not be able to use the suspend/sleep feature or the Remote Management features. • POST Delay (in seconds) (enable/disable). Enabling this feature will add a user-specified delay to the POST process. This delay is sometimes needed for hard disks on some PCI cards that spin up very slowly; so slowly that they are not ready to boot by the time POST is finished. The POST delay also gives you more time to select the **F10** key to enter Computer (F10) Setup.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Advanced* *(continued)* *For advanced users only.	Power-On Options *(continued)*	Allows you to set: • I/O APIC Mode (enable/disable). Enabling this feature will allow Microsoft Windows Operating Systems to run optimally. This feature must be disabled for certain non-Microsoft Operating Systems to work properly. • ACPI/USB Buffers @ Top of Memory (enable/disable). Enabling this feature places USB memory buffers at the top of memory. The advantage is that some amount of memory below 1 MB is freed up for use by option ROMs. The disadvantage is that a popular memory manager, HIMEM.SYS, does not work properly when USB buffers are at top of memory AND the system has 64 MB or less of RAM. • Hyper-threading (enable/disable). • Limit CPUID Maximum Value to 3 - Restricts the number of CPUID functions reported by the microprocessor. Enable this feature if booting to WinNT.
	BIOS Power-On	Allows you to set the computer to turn on automatically at a time you specify.
	Onboard Devices	Allows you to set resources for or disable onboard system devices (diskette controller, serial port, or parallel port).

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Advanced* *(continued)* *For advanced users only.	PCI Devices	• Lists currently installed PCI devices and their IRQ settings. • Allows you to reconfigure IRQ settings for these devices or to disable them entirely. These settings have no effect under an APIC-based operating system.
	Bus Options	On select models, allows you to enable or disable: • PCI SERR# Generation. • PCI VGA palette snooping, which sets the VGA palette snooping bit in PCI configuration space; only needed when more than one graphics controller is installed.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Advanced* *(continued)* *For advanced users only.	Device Options	Allows you to set: • Printer mode (bi-directional, EPP & ECP, output only). • **Num Lock** state at power-on (off/on). • S5 Wake on LAN (enable/disable). • To disable Wake on LAN during the off state (S5), use the arrow (left and right) keys to select the **Advanced** > **Device Options** menu and set the S5 Wake on Lan feature to "Disable." This obtains the lowest power consumption available on the computer during S5. It does not affect the ability of the computer to Wake on LAN from suspend or hibernation, but will prevent it from waking from S5 via the network. It does not affect operation of the network connection while the computer is on. • If a network connection is not required, completely disable the network controller (NIC) by using the arrow (left and right) keys to select the **Security** > **Device Security** menu. Set the Network Controller option to "Device Hidden." This prevents the network controller from being used by the operating system and reduces the power used by the computer in S5. • Processor cache (enable/disable).

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
Advanced* *(continued)* *For advanced users only.	Device Options *(continued)*	Allows you to set: • Unique Sleep State Blink Patterns. Allows you to choose an LED blink pattern that uniquely identifies each sleep state. • Integrated Video (enable/disable) Allows you to use integrated video and PCI Up Solution video at the same time (available on select models only). ✎ Inserting a PCI or PCI Express video card automatically disables Integrated Video. When PCI Express video is on, Integrated Video must remain disabled. • Monitor Tracking (enable/disable). Allows ROM to save monitor asset information. • NIC PXE Option ROM Download (enable/disable). The BIOS contains an embedded NIC option ROM to allow the unit to boot through the network to a PXE server. This is typically used to download a corporate image to a hard drive. The NIC option ROM takes up memory space below 1MB commonly referred to as DOS Compatibility Hole (DCH) space. This space is limited. This F10 option will allow users to disable the downloading of this embedded NIC option ROM thus giving more DCH space for additional PCI cards which may need option ROM space. The default will be to have the NIC option ROM enabled.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Computer Setup *(Continued)*

Heading	Option	Description
	PCI VGA Configuration	Displayed only if there are multiple PCI video adapters in the system. Allows you to specify which VGA controller will be the "boot" or primary VGA controller.

✎ Support for specific Computer Setup options may vary depending on the hardware configuration.

Recovering the Configuration Settings

There are two ways to recover the Configuration Settings established in the Computer Setup (F10) Utility.

Method One: Flash ROM CMOS Archive and Restore Feature—Using Power Switch Override

F10 Computer Setup CMOS Configuration Settings are stored in Non-Volatile RAM (NVRAM).

Each time the computer starts, the system ROM saves a copy of NVRAM (including CMOS, passwords, and other system variables) in the flash ROM. Should the system become unstable, the last known good copy of NVRAM can be restored using a feature called "power button override." To restore NVRAM do the following:

1. With the unit powered down, press and release the power button.
2. Immediately after pressing the power button (during POST), press and hold the power button until the unit powers down (about four seconds).

At the next startup, the ROM detects this "power button override" event and the backup copy of NVRAM is restored automatically.



CAUTION: Unplugging the power cord during POST can corrupt the splash screen (the logo screen seen during POST). Flashing the ROM is required to restore the splash screen, although the computer will continue to function normally.



Because of the "power button override "feature, you cannot power off the computer with the power button immediately after powering up during POST (Power-On Self-Test). The video display must be active before the computer can be powered off by pushing the power button.

Method Two: Save to Removable Media and Restore from Removable Media

This method of recovery requires that you first perform the Save to Removable Media command with the Computer Setup (F10) Utility before Restore is needed. (See "Save to Removable Media" on page 4 in the Computer Setup options table.)



It is recommended that you save any modified computer configuration settings to a diskette, a USB flash media device, or a diskette-like device (a storage device set to emulate a diskette drive) and save the diskette or device for possible future use.

To restore the configuration, insert the diskette, USB flash media device, or other storage media emulating a diskette with the saved configuration and perform the Restore from Removable Media command with the Computer Setup (F10) Utility. (See"Restore from Removable Media" on page 4 in the Computer Setup options table.)